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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/040,056	12/31/2001	Amnon Silverstein	10010658	1798
7590	12/14/2004		EXAMINER	
HEWLETT-PACKARD COMPANY			RAHMJOO, MANUCHER	
Intellectual Property Administration			ART UNIT	PAPER NUMBER
P.O. Box 272400				
Fort Collins, CO 80527-2400			2676	

DATE MAILED: 12/14/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No.	Applicant(s)	
	10/040,056	SILVERSTEIN, AMNON	
	Examiner Mike Rahmjoo	Art Unit 2676	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1) Responsive to communication(s) filed on 09 August 2004.

2a) This action is **FINAL**. 2b) This action is non-final.

3) Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4) Claim(s) 1-23 is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5) Claim(s) _____ is/are allowed.

6) Claim(s) 1-23 is/are rejected.

7) Claim(s) _____ is/are objected to.

8) Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9) The specification is objected to by the Examiner.

10) The drawing(s) filed on _____ is/are: a) accepted or b) objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11) The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12) Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a) All b) Some * c) None of:

1. Certified copies of the priority documents have been received.

2. Certified copies of the priority documents have been received in Application No. _____.

3. Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) Notice of References Cited (PTO-892)
2) Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date _____

4) Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____
5) Notice of Informal Patent Application (PTO-152)
6) Other: _____

DETAILED ACTION

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Claims 1- 23 are rejected under 35 U.S.C. 103(a) as being unpatentable over Szelliski et al US Patent 6,009,190, hereinafter, Szeliski in view of Martin et al (US Patent 6,714,206, hereinafter, Martin).

As per claims 1,10 and 16 Szeliski teaches accessing said image (see for example column 9 lines 13- 15 for localizing results to sub- pixel precision corresponding to sub- pixels of an image), said image sampled at a higher spatial resolution than the spatial resolution of said display see for example figures 2- 7 column 13 lines 27- 31; based on intensity of said first color in said region of said image(the pseudocolor associated with each **pixel inside**, calculating **an** intensity value (matching the face color id tag of the triangle) for said first color to be displayed in said sub- pixel of said display, wherein said region comprises an intensity value for each of said plurality of colors see for example column 29 lines 54- 67 and column 20 lines 20- 43 wherein **average color** corresponding to a **pixel location** in a **triangle** along with **color or intensity** is used; and repeating the mapping and calculating for additional sub-

pixels of said display corresponding to additional regions of said image, mapping each sub- pixel to its own region, wherein said image is processed see for example column 29 lines 1- 3 and 54- 62 and figure 31 (through repeating the steps for each triangle); and rendering said image on said display, based on said calculated intensities see for example column 27 lines 62- 67 and column 28 lines 1- 8 and column 32 lines 5- 9.

However, Szeliski does not teach mapping a sub- pixel of a display to a region of said image, said sub- pixel operable to display a first color of a plurality of colors.

Martin teaches mapping a sub- pixel of a display to a region of said image, said sub- pixel operable to display a first color of a plurality of colors see for example the abstract and column 5 lines 60- 62 and figure 9a and claim 1. Martin also teaches calculating the sub- pixel intensity see for example the abstract and column 4 lines 20- 22; and rendering said image on said display based on said calculated intensities see for example the abstract, claim 1 and figures 9.

It would have been made obvious to one of ordinary skilled in the art at the time the invention was made to incorporate the teachings of Martin into Szeliski to use logical pixels (a center sub- pixel and its surrounding sub- pixels) which allows and improves image quality and therefore offers an state of the art device to the user with higher degree of reliability and precision see for example 3 lines 5- 30.

As per claim 2 Szeliski teaches displaying said processed image on said display, said display providing for control over individual sub-pixels see for example column 9 lines 21- 35.

As per claim 3 Szeliski teaches averaging the intensity value of said first color

over a plurality of regions neighboring said region of said image, wherein each of said areas maps to its own plurality of regions see for example column 30 lines 20- 21.

As per claims 4 and 7 Szeliski teaches based on the intensity of said first color in said plurality of regions of said image, calculating an intensity value for said first color see for example column 29 lines 54- 67; and calculating an error for said first color see for example column 11 lines 44- 56; and propagating said error for said first color for processing further regions of said image see for example column 32 lines 40- 42.

As per claim 5 Szeliski teaches using in the intensity value calculating an error that was propagated when processing another sub- pixel for said first color see for example column 12 lines 48- 50.

As per claim 6 Szeliski teaches based on the intensity of said first color in said region of said image, calculating an uncompensated intensity value for said first color(computation of intensity through triangles with id tags) see for example column 29 lines 57- 67 and figure 31; and calculating an error for each of the rest of said plurality of colors within said region see for example column 11 lines 44- 56; and storing said errors (registration of errors) for said rest of said colors for processing further regions of said image see for example column 32 lines 43- 45; and calculating a compensated intensity value for said area(compensation through de- ghosting; a method for improving quality of image mosaics see for example column 32 line 37), based on said uncompensated intensity value and errors which were calculated for said first color when processing other image regions see for example column 32 lines 54- 58.

As per claim 8 Szeliski teaches filtering said image to prior to calculating the

intensity value for said first color to be displayed, thereby producing a filtered image having a similar color scheme as said display see for example column 29 lines 18- 20.

As per claim 9 Szeliski teaches said output display has sub- pixel control see for example column 9 lines 21- 35.

As per Claims 11- 15 and 17- 23, these claims are similar in scope to claims 1- 9 and rejected under the same rational.

Response to Arguments

Applicant's arguments with respect to claim 1- 23 have been considered but are moot in view of the new ground(s) of rejection.

Conclusion

The prior art made of record and not relied upon is considered pertinent to applicant's disclosure; US Patent 6,816,167, and 6,559,858.

Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the

shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

Inquiry

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Mike Rahmjoo whose telephone number is (703) 305-5658. The examiner can normally be reached on 6:30- 3:00.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Matthew Bella can be reached on (703) 308- 6829. The fax phone numbers for the organization where this application or proceeding is assigned are (703) 872-9314 for regular communications and (703) 872- 9314 for After Final communications.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is (703) 305-4750.

Mike Rahmjoo

December 11, 2004

Matthew C. Bella
MATTHEW C. BELLA
SUPERVISORY PATENT EXAMINER
TECHNOLOGY CENTER 2600